

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) In a system including a wireless device, a network device, and a notification server, wherein the notification server is configured to send notifications to other computer systems when data objects of interest to the other computer systems change in a corresponding data store, the wireless device configured to communicate with the notification server over a first communication channel and configured to connect to the network device, the network device configured to communicate with the notification server over a second communication channel comprising the internet, the first communication channel having ~~higher availability and lower bandwidth capacity~~ relative to the second communication channel, the second channel having higher capacity relative to first communication channel, a method for the notification server to deliver notifications to the wireless device to update the wireless device about changes to data objects in the corresponding data store, the method comprising performing:

an act of communicating with the wireless device over the lower capacity first communication channel, the communication indicative of notifications for the wireless device being routable over the lower capacity first communication channel;

an act of receiving subsequent communication through the network device, the subsequent communication notifying the notification server that the wireless device has access to the higher capacity second communication channel, the subsequent communication including a network device address for the network device to indicate to the notification server that notifications for the wireless device are also routable to the network device address over the higher capacity second communication channel;

an act of accessing a notification indicative of a change to a data object in the corresponding data store, the notification accessed after receiving the subsequent communication through the network device, the notification for delivery to the wireless device;

an act of automatically making a first routing determination determining that the notification is to be routed over the higher capacity second communication channel an appropriate communication channel, from among the first and second communication channels, over which to route the notification to the wireless device, the determination based on the size of the notification and the current availability of the first and higher capacity second communication channels, even though the lower capacity first communication channel also remains available;

an act of routing the notification over the appropriate higher capacity second communication channel for delivery to the wireless device in response to the first routing determination determining the appropriate communication channel based on the size of the notification and the current availability of the first and second communication channels;

act of receiving an express indication from the wireless device over the lower capacity first communication channel, the express indication indicating to the notification server that:

the connection between the wireless device and the notification server over the higher capacity second communication channel has been lost ; and

further notifications sent to the wireless device are to revert to being routed over the lower capacity first communication channel;

an act of accessing a second notification indicative of a change to a second data object in the corresponding data store, the second notification accessed after receiving the subsequent indication from the wireless device, the second notification for delivery to the wireless device;

an act of automatically making a second routing determination that at least a portion of the second notification is to be routed over the lower capacity second communication channel based on the size of the notification and the loss of connection to the higher capacity second communication channel; and

an act of routing the at least a portion of the second notification over the lower capacity first communication channel for delivery to the wireless device in response to the second routing determination.

2. (Previously Presented) A method as defined in claim 1, wherein the wireless device communicates with the network device over a communication link, and wherein the wireless device automatically connects with the network device.

3. (Original) A method as defined in claim 2, wherein the network device is one of a desktop computer, a blue tooth enabled LAN, and a kiosk.

4. (Original) A method as defined in claim 2, wherein the communication link is one of a serial link, a universal serial bus link, a wireless Bluetooth link and an infrared link.

Claims 5 – 10. (Cancelled).

11. (Original) A computer program product having computer executable instructions for performing the acts recited in claim 1.

12. (Currently Amended) In a system including a wireless device, a network device, and a notification server, wherein the notification server is configured to send notifications to other computer systems when data objects of interest to the other computer systems change in a corresponding data store, the wireless device configured to communicate with the notification server over a first communication channel and configured to connect to the network device, the network device configured to communicate with the notification server over a second communication channel comprising the internet, the first communication channel having higher availability and lower bandwidth capacity relative to the second communication channel, the second channel higher capacity relative to the first communication channel, a method the network device to deliver notifications to the wireless device to update the wireless device about changes to data objects in the corresponding data store, the method comprising steps for:

an act of communicating with the wireless device over the lower capacity first communication channel, the communication indicative notifications for the wireless device being routable over the lower capacity first communication channel;

an act of subsequently receiving information from the wireless device over the lower capacity first channel indicating that the wireless device has access to notifications for the wireless device are to be routed over the higher capacity second communication channel, the received information to indicate to the notification server that notifications for the wireless device are also routable to the network device over the higher capacity second communication channel;

a step for establishing communication over the higher capacity second communication channel between the wireless device and the notification server;

an act of accessing a notification indicative of a change to a data object in the corresponding data store, the notification accessed after receiving the subsequent communication, the notification for delivery to the wireless device;

an act of automatically making a first routing determination determining that the notification is to be routed over the higher capacity second communication channel an appropriate communication channel, from among the first and second communication channels, over which to route the notification to the wireless device, the determination based on the size of the notification and the current availability of the first and higher capacity second communication channels, even though the lower capacity first communication channel also remains available; and

a step for sending the notification over the higher capacity second communication channel comprising the internet instead of the lower capacity first communication channel in response to receiving the information from the wireless device over the lower capacity first communication channel;

act of receiving an indication from the wireless device over the lower capacity first communication channel, the indication indicating:

the connection between the wireless device and the notification server over the higher capacity second communication channel has been lost ; and

further notifications sent to the wireless device are to revert to being routed over the lower capacity first communication channel;

an act of accessing a second notification indicative of a change to a second data object in the corresponding data store, the second notification accessed after receiving the subsequent indication from the wireless device, the notification for delivery to the wireless device;

an act of automatically making a second routing determination that at least a portion of the second notification is to be routed over the lower capacity second communication channel based on the size of the notification and the loss of connection to the higher capacity second communication channel; and

an act of routing the at least a portion of the second notification over the lower capacity first communication channel for delivery to the wireless device in response to the second routing determination.

13. (Currently Amended) A method as defined in claim 12, wherein the step for establishing communication of the higher capacity second communication channel further comprises:

an act for connecting the wireless device with a network device corresponding to a network address that is included in the information received at the notification server, wherein the network device has an existing access to the higher capacity second communication channel; and

an act of detecting the higher capacity second communication channel by the wireless device.

14. (Currently Amended) A method as defined in claim 12, wherein the act of establishing communication over the higher capacity second communication channel further comprises:

an act of formatting the notifications for transmission over the higher capacity second communication channel.

Claims 15 and 16. (Cancelled).

17. (Currently Amended) A method as defined in claim 12, further comprising a step for resuming the step for sending notifications over the higher capacity second communication channel when the wireless device again has access to the higher capacity second communication channel.

18. (Currently Amended) A method as defined in claim 12, further comprising a step for preparing the notification for transmission over the higher capacity second communication channel when the wireless device has access to the higher capacity second communication channel.

19. (Currently Amended) A method as defined in claim 12, further comprising a step for preparing the notification for transmission over the lower capacity first communication channel when the wireless device does not have access to the higher capacity second communication channel.

20. (Original) A computer program product having computer executable instructions for performing the steps recited in claim 12.

21. (Currently Amended) A method as recited in claim 12, the method further comprising:

an act of providing the wireless device with access to the higher capacity second communication channel through a network device connected to the higher capacity second communication channel when the wireless device is in communication with the network device;

an act of contacting a proxy server over the higher capacity second communication channel to notify the proxy server that the wireless device has access to the higher capacity second communication channel; and

an act of receiving notifications from the notification server over the higher capacity second communication channel until the wireless device no longer has access to the higher capacity second communication channel, wherein the notification are re-routed by the proxy server over the higher capacity second communication channel.

22. (Currently Amended) A method as defined in claim 21, further comprising an act of receiving notifications over the lower capacity first communication channel when the higher capacity second communication channel is not available to the wireless device.

23. (Currently Amended) A method as defined in claim 21, wherein the act of providing the wireless device with access to the higher capacity second communication channel further comprises an act of connecting the wireless device at a docking station, the docking station having a communication link with the network device that provides the wireless device with access to the higher capacity second communication channel through the network device.

24. (Currently Amended) A method as defined in claim 21, further comprising an act of sending notifications over the lower capacity first communication channel when the wireless devices loses access to the higher capacity second communication channel.

25. (Currently Amended) A method as recited in claim 12, the method further comprising:

an act of a proxy server receiving an access notification from the wireless device, wherein the access notification informs the proxy server that the wireless device has access to the higher capacity second communication channel;

an act of the proxy server routing the notification to the wireless device over the higher capacity second communication channel instead of the lower capacity first communication channel; and

an act of the proxy server resuming sending the notification to the wireless device over the lower capacity first communication channel when the wireless device no longer has access to the higher capacity second communication channel.

26. (Currently Amended) A method as defined in claim 25, wherein the act of the proxy server routing the notification further comprises an act of formatting the notification for transmission over the higher capacity second communication channel.

27. (Currently Amended) A method as defined in claim 25, wherein the act of detecting the higher capacity second communication channel further comprises an act of connecting the wireless device with the higher capacity second communication network over a communication link.

28. (Previously Presented) A method as defined in claim 27, wherein the communication link is provided by the network device, the communication link being one of: a serial link, a universal serial bus link, a wireless Bluetooth link, and an infrared link.

29. (Currently Amended) A method as defined in claim 25, further comprising an act of the proxy server determining that the wireless device no longer has access to the higher capacity second communication channel.

30. (Currently Amended) A method as defined in claim 29, wherein the act of the proxy server determining that the wireless device no longer has access further comprises:

an act of implementing a timeout for the notification sent to the wireless device;
and

an act of resuming sending the notification to the wireless device over the lower capacity first communication channel if an acknowledgement of the notification is not received by the proxy server before the timeout expires.

31. (Previously Presented) A computer program product comprising a physical computer readable medium having stored thereon computer executable instructions for performing the method of claim 25.

32. (Currently Amended) A computer program product as recited in claim 31, wherein the method further comprises:

detecting the higher capacity second communication channel by the wireless device, wherein the wireless device has access to the higher capacity second communication channel through the network device;

notifying the notification server that the wireless device can receive notifications over the higher capacity second communication channel; and

sending notifications over the higher capacity second communication channel, wherein the network device forwards the notifications to the wireless device.

33. (Currently Amended) A computer program product as defined in claim 32, wherein the method further comprises:

an act of detecting that the wireless device no longer has access to the higher capacity second communication channel; and

an act of sending notifications over the lower capacity first communication channel when the higher capacity second communication channel is unavailable to the wireless device.

34. (Currently Amended) A computer program product as defined in claim 32, wherein the method further comprises:

an act of the wireless device sending an acknowledgement to the notification server for each notification received by the wireless device; and

an act of the notification server determining that the wireless device no longer has access to the higher capacity second communication channel if a particular acknowledgement for a particular notification is not received in a time period.

35. (Currently Amended) A computer program product as defined in claim 32, wherein the method further comprises:

an act of formatting the notification for transmission over the lower capacity first communication channel if the higher capacity second communication channel is unavailable; and

an act of formatting the notification for transmission over the higher capacity second communication channel when the wireless device has access to the higher capacity second communication channel.

36. (Original) A computer program product as defined in claim 32, wherein the method further comprises an act of docking the wireless device with the network device.

37. (Currently Amended) A method as recited in claim 1, wherein it is more costly to use the lower capacity first communication channel than the higher capacity second communication channel.

38. (Currently Amended) A method as recited in claim 1, wherein the lower capacity first communication channel is substantially always available for notifications to be sent to the wireless device.

39. (Currently Amended) A method as recited in claim 1, wherein the notification server is external to the infrastructure of the lower capacity first communication channel and external to the infrastructure of the higher capacity second communication channel and wherein the notification server is further configured to send application data notifications to the wireless device over the infrastructure of the lower capacity first communication channel and the infrastructure of the higher capacity second communication channel when the notification server is notified how to communicate with the wireless device over the infrastructure of the lower capacity first communication channel or over the infrastructure of the higher capacity second communication channel.

40. (New) The method as recited in claim 1, wherein the act of receiving an express indication from the wireless device over the lower capacity first communication channel comprises an act of receiving an express indication from the wireless device over a wireless network, the indication indicating that the wireless device has lost a prior connection to a wired network, the connection to the wired network having been established by coupling the wireless device to a docking station that was connected to the wired network.